Listing of Claims:

1. (Original) An image pickup system for tone converting and outputting a color signal of a primary color or a color signal of a complementary color from an image pickup apparatus, the system comprising:

color space converting means for converting the color signal to signals in a color space having three signals including a luminance signal, a hue signal and a chroma signal;

tone converting means for performing tone conversion on the luminance signal;

correction coefficient calculating means for calculating a chroma correction coefficient to be used for performing correction on the chroma signal;

maximum chroma calculating means for calculating a first maximum chroma value in the color space with respect to the luminance signal from the color space converting means and the hue signal from the color space converting means and a second maximum chroma value in the color space with respect to the luminance signal converted by the tone converting means and the hue signal from the color space converting means; and

chroma correcting means for performing correction on the chroma signal based on the first maximum chroma value, the second maximum chroma value and the chroma correction coefficient.

2. (Original) An image pickup system for tone converting and outputting a color signal of a primary color or a color signal of a complementary color from an image pickup apparatus, the system comprising:

color space converting means for converting the color signal to signals in a color space having three signals including a luminance signal, a hue signal and a chroma signal;

tone converting means for performing tone conversion on the luminance signal;

correction coefficient calculating means for calculating a hue correction coefficient to be used for correcting the hue signal with respect to the hue signal in a predetermined range and for calculating a chroma correction coefficient to be used for correcting the chroma signal with respect to the hue signal in the predetermined range;

maximum chroma calculating means for calculating a first maximum chroma value in the color space with respect to the

luminance signal from the color space converting means and the hue signal from the color space converting means and a second maximum chroma value in the color space with respect to the luminance signal converted by the tone converting means and the hue signal corrected by using the hue correction coefficient; and

chroma correcting means for performing correction on the chroma signal based on the first maximum chroma value, the second maximum chroma value and the chroma correction coefficient.

3. (Original) An image pickup system for tone converting and outputting a color signal of a primary color or a color signal of a complementary color from an image pickup apparatus, the system comprising:

color space converting means for converting the color signal to signals in a color space having three signals including a luminance signal, a hue signal and a chroma signal;

tone converting means for performing tone conversion on the luminance signal;

first correction coefficient calculating means for calculating a first chroma correction coefficient to be used for performing correction on the chroma signal;

second correction coefficient calculating means for calculating a hue correction coefficient to be used for correcting the hue signal with respect to the hue signal in a predetermined range and for calculating a second chroma correction coefficient to be used for correcting the chroma signal with respect to the hue signal in the predetermined range;

maximum chroma calculating means for calculating a first maximum chroma value in the color space with respect to the luminance signal from the color space converting means and the hue signal from the color space converting means and a second maximum chroma value in the color space with respect to the luminance signal converted by the tone converting means and the hue signal corrected by using the hue correction coefficient; and

chroma correcting means for performing correction on the chroma signal based on the first maximum chroma value, the second maximum chroma value, the first chroma correction coefficient and the second chroma correction coefficient.

4. (Currently Amended) An image pickup system according to Claim 1, ~~2 or 3,~~ wherein the color space converting means uses a YCbCr color space or a CIE Lab color space as a color space.

5. (Currently Amended) An image pickup system according to Claim 1, wherein the correction coefficient calculating means ~~comprising~~ comprises at least one of:

chroma suppress means for calculating a chroma correction coefficient based on an edge strength value calculated from the luminance signal;

highlight cyan means for calculating a chroma correction coefficient based on the luminance signal; and

chroma emphasis means for calculating a chroma correction coefficient based on the hue signal.

6. (Currently Amended) An image pickup system according to Claim 3,

wherein the first correction coefficient calculating means ~~comprising~~ comprises at least one of:

~~the~~ chroma suppress means for calculating a first chroma correction coefficient based on an edge strength value calculated from the luminance signal;

~~the~~ highlight cyan means for calculating a first chroma correction coefficient based on the luminance signal; and

~~the~~ chroma emphasis means for calculating a first chroma correction coefficient based on the hue signal.

7. (Currently Amended) An image pickup system according to Claim 1 ~~, 2 or 3~~, wherein the maximum chroma calculating means ~~comprising~~ comprises:

recording means for recording a function for associating a luminance signal and a maximum chroma value for multiple predetermined hue planes;

searching means for searching two nearest hue planes adjacent to the hue signal from multiple hue planes recorded in the recording means;

retrieving means for retrieving functions relating to the two hue planes searched by the searching means from the recording means;

calculating means for calculating two maximum chroma values based on the two functions retrieved by the retrieving means and the luminance signal;

interpolating means for interpolating and obtaining a maximum chroma value with respect to the hue signal from the two maximum chroma values.

8. (Original) An image pickup system according to Claim 7, wherein the recording means records a high intensity function for associating a luminance signal having a value equal to or higher

than a predetermined intensity value and a maximum chroma value, a low intensity function for associating a luminance signal having a value equal to or lower than the predetermined intensity value and the maximum chroma value with respect to each of the multiple predetermined hue planes, and the predetermined intensity value.

9. (Original) An image pickup system according to Claim 7, wherein the recording means records at least one of a primary function, a polynomial function, a power function and a spline function as the function.

10. (Original) An image pickup system according to Claim 7, wherein the recording means includes hue planes of red, green, blue, cyan, magenta and yellow as the multiple predetermined hue planes.

11. (Currently Amended) An image pickup system according to Claim 1, ~~2 or 3,~~ wherein the maximum chroma calculating means ~~comprising:~~ comprises table means for recording a maximum chroma value in the color space with respect to the luminance signal and the hue signal.

12. (Currently Amended) An image pickup system according to Claim 1~~ or 2~~, wherein the chroma correcting means ~~comprising~~ comprises:

ratio calculating means for calculating a ratio between the first maximum chroma value and the second maximum chroma value;

multiplying means for multiplying the chroma signal by the ratio and the chroma correction coefficient; and

limiting means for setting a limit such that the chroma signal having been multiplied by the ratio and the chroma correction coefficient by the multiplying means may not deviate from the second maximum chroma value.

13. (Currently Amended) An image pickup system according to Claim 3, wherein the chroma correcting means ~~comprising~~ comprises:

~~the~~ ratio calculating means for calculating a ratio between the first maximum chroma value and the second maximum chroma value;

~~the~~ multiplying means for multiplying the chroma signal by the ratio, the first chroma correction coefficient and the second chroma correction coefficient; and

~~the~~ limiting means for setting a limit such that the chroma signal having been multiplied by the ratio, the first chroma correction coefficient and the second chroma correction coefficient by the multiplying means may not deviate from the second maximum chroma value.

14. (Currently Amended) An image pickup system according to Claim 12 ~~or 13~~, wherein the limiting means ~~comprising~~ comprises replacing means for replacing the chroma signal by the second maximum chroma value when the chroma signal from the multiplying means deviates from the second maximum chroma value.

15. (Currently Amended) An image pickup system according to Claim 12 ~~or 13~~, wherein the limiting means ~~comprising~~ comprises nonlinear compressing means for, when the chroma signal from the multiplying means exceeds a predetermined threshold value lower than the second maximum chroma value, converting the chroma signal to a value between the second maximum chroma value and the threshold value.

16. (Currently Amended) An image processing program for causing a computer to function as:

color space converting means for converting a color signal of a primary color or a color signal of a complementary color to signals in a color space having three signals including a luminance signal, a hue signal and a chroma signal;

tone converting means for performing tone conversion on the luminance signal;

correction coefficient calculating means for calculating a chroma correction coefficient to be used for performing correction on the chroma signal;

maximum chroma calculating means for calculating a first maximum chroma value in the color space with respect to the luminance signal from the color space converting means and the hue signal from the color space converting means and a second maximum chroma value in the color space with respect to the luminance signal converted by the tone converting means and the hue signal from the color space converting means; and

chroma correcting means for performing correction on the chroma signal based on the first maximum chroma value, the second maximum chroma value and the chroma correction coefficient.

17. (Currently Amended) An image processing program for causing a computer to function as:

color space converting means for converting a color signal of a primary color or a color signal of a complementary color to signals in a color space having three signals including a luminance signal, a hue signal and a chroma signal;

tone converting means for performing tone conversion on the luminance signal;

correction coefficient calculating means for calculating a hue correction coefficient to be used for correcting the hue signal with respect to the hue signal in a predetermined range and for calculating a chroma correction coefficient to be used for correcting the chroma signal with respect to the hue signal in the predetermined range;

maximum chroma calculating means for calculating a first maximum chroma value in the color space with respect to the luminance signal from the color space converting means and the hue signal from the color space converting means and a second maximum chroma value in the color space with respect to the luminance signal converted by the tone converting means and the hue signal corrected by using the hue correction coefficient; and

chroma correcting means for performing correction on the chroma signal based on the first maximum chroma value, the second maximum chroma value and the chroma correction coefficient.

18. (Original) An image processing system for causing a computer to function as:

color space converting means for converting a color signal of a primary color or a color signal of a complementary color to signals in a color space having three signals including a luminance signal, a hue signal and a chroma signal;

tone converting means for performing tone conversion on the luminance signal;

first correction coefficient calculating means for calculating a first chroma correction coefficient to be used for performing correction on the chroma signal;

second correction coefficient calculating means for calculating a hue correction coefficient to be used for correcting the hue signal with respect to the hue signal in a predetermined range and for calculating a second chroma correction coefficient to be used for correcting the chroma signal with respect to the hue signal in the predetermined range;

maximum chroma calculating means for calculating a first maximum chroma value in the color space with respect to the luminance signal from the color space converting means and the hue signal from the color space converting means and a second maximum chroma value in the color space with respect to the luminance signal converted by the tone converting means and the hue signal corrected by using the hue correction coefficient; and

chroma correcting means for performing correction on the chroma signal based on the first maximum chroma value, the second maximum chroma value, the first chroma correction coefficient and the second chroma correction coefficient.

19. (New) An image pickup system according to Claim 2, wherein the color space converting means uses a YCbCr color space or a CIE Lab color space as a color space.

20. (New) An image pickup system according to Claim 3, wherein the color space converting means uses a YCbCr color space or a CIE Lab color space as a color space.

21. (New) An image pickup system according to Claim 2, wherein the maximum chroma calculating means comprises:

recording means for recording a function for associating a luminance signal and a maximum chroma value for multiple predetermined hue planes;

searching means for searching two nearest hue planes adjacent to the hue signal from multiple hue planes recorded in the recording means;

retrieving means for retrieving functions relating to the two hue planes searched by the searching means from the recording means;

calculating means for calculating two maximum chroma values based on the two functions retrieved by the retrieving means and the luminance signal;

interpolating means for interpolating and obtaining a maximum chroma value with respect to the hue signal from the two maximum chroma values.

22. (New) An image pickup system according to Claim 3, wherein the maximum chroma calculating means comprises:

recording means for recording a function for associating a luminance signal and a maximum chroma value for multiple predetermined hue planes;

searching means for searching two nearest hue planes adjacent to the hue signal from multiple hue planes recorded in the recording means;

retrieving means for retrieving functions relating to the two hue planes searched by the searching means from the recording means;

calculating means for calculating two maximum chroma values based on the two functions retrieved by the retrieving means and the luminance signal;

interpolating means for interpolating and obtaining a maximum chroma value with respect to the hue signal from the two maximum chroma values.

23. (New) An image pickup system according to Claim 21, wherein the recording means records a high intensity function for associating a luminance signal having a value equal to or higher than a predetermined intensity value and a maximum chroma value, a low intensity function for associating a luminance signal having a value equal to or lower than the predetermined intensity value and the maximum chroma value with respect to each of the multiple predetermined hue planes, and the predetermined intensity value.

24. (New) An image pickup system according to Claim 22, wherein the recording means records a high intensity function for associating a luminance signal having a value equal to or higher than a predetermined intensity value and a maximum chroma value, a low intensity function for associating a luminance signal having a value equal to or lower than the predetermined intensity value and the maximum chroma value with respect to each of the multiple predetermined hue planes, and the predetermined intensity value.

25. (New) An image pickup system according to Claim 21, wherein the recording means records at least one of a primary function, a polynomial function, a power function and a spline function as the function.

26. (New) An image pickup system according to Claim 22, wherein the recording means records at least one of a primary function, a polynomial function, a power function and a spline function as the function.

27. (New) An image pickup system according to Claim 21, wherein the recording means includes hue planes of red, green,

blue, cyan, magenta and yellow as the multiple predetermined hue planes.

28. (New) An image pickup system according to Claim 22, wherein the recording means includes hue planes of red, green, blue, cyan, magenta and yellow as the multiple predetermined hue planes.

29. (New) An image pickup system according to Claim 2, wherein the maximum chroma calculating means comprises table means for recording a maximum chroma value in the color space with respect to the luminance signal and the hue signal.

30. (New) An image pickup system according to Claim 3, wherein the maximum chroma calculating means comprises table means for recording a maximum chroma value in the color space with respect to the luminance signal and the hue signal.

31. (New) An image pickup system according to Claim 2, wherein the chroma correcting means comprises:

ratio calculating means for calculating a ratio between the first maximum chroma value and the second maximum chroma value;

multiplying means for multiplying the chroma signal by the ratio and the chroma correction coefficient; and

limiting means for setting a limit such that the chroma signal having been multiplied by the ratio and the chroma correction coefficient by the multiplying means may not deviate from the second maximum chroma value.

32. (New) An image pickup system according to Claim 31, wherein the limiting means comprises replacing means for replacing the chroma signal by the second maximum chroma value when the chroma signal from the multiplying means deviates from the second maximum chroma value.

33. (New) An image pickup system according to Claim 13, wherein the limiting means comprises replacing means for replacing the chroma signal by the second maximum chroma value when the chroma signal from the multiplying means deviates from the second maximum chroma value.

34. (New) An image pickup system according to Claim 31, wherein the limiting means comprises nonlinear compressing means for, when the chroma signal from the multiplying means exceeds a

predetermined threshold value lower than the second maximum chroma value, converting the chroma signal to a value between the second maximum chroma value and the threshold value.

35. (New) An image pickup system according to Claim 13, wherein the limiting means comprises nonlinear compressing means for, when the chroma signal from the multiplying means exceeds a predetermined threshold value lower than the second maximum chroma value, converting the chroma signal to a value between the second maximum chroma value and the threshold value.